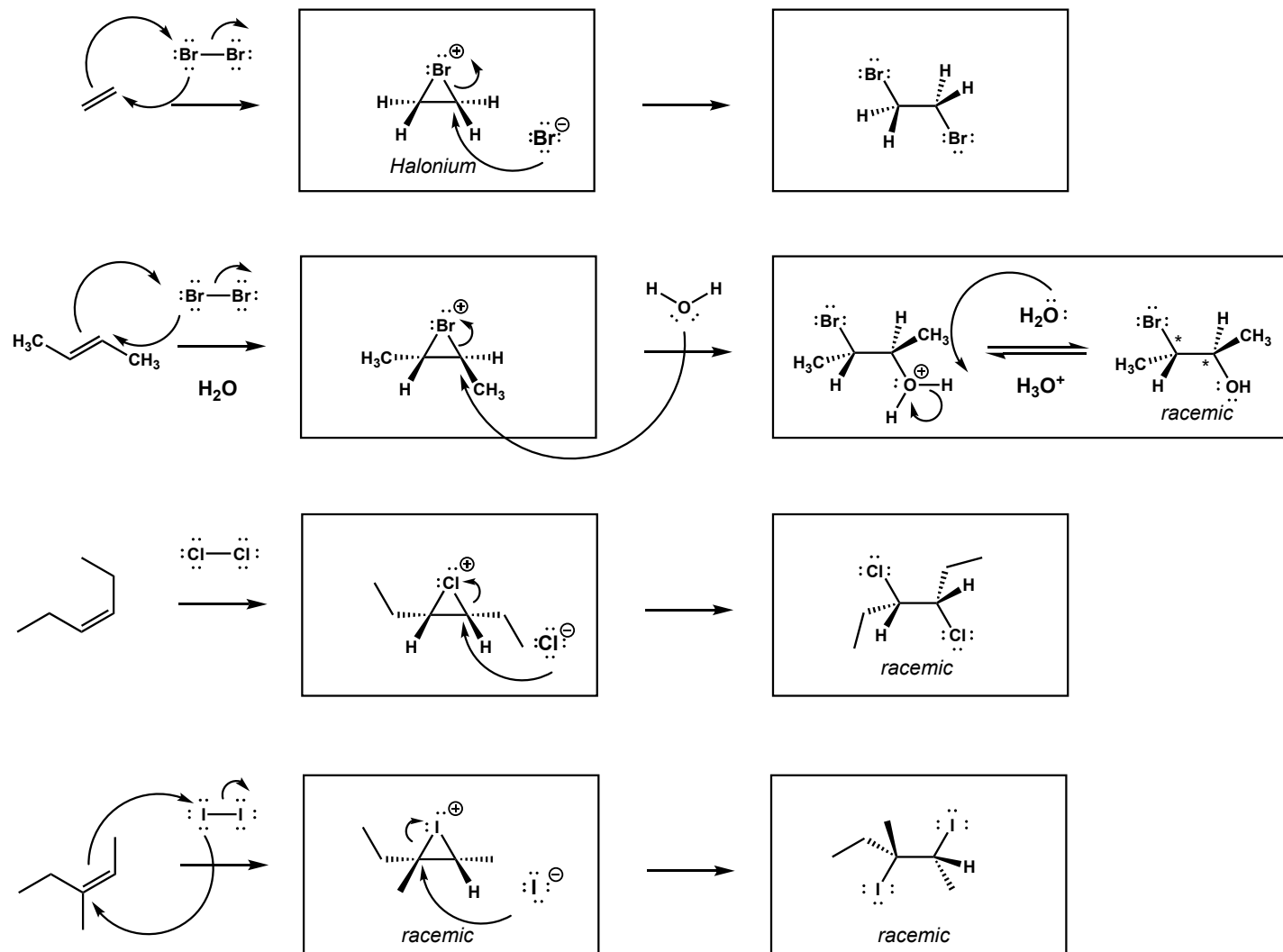


The Halonium Ion

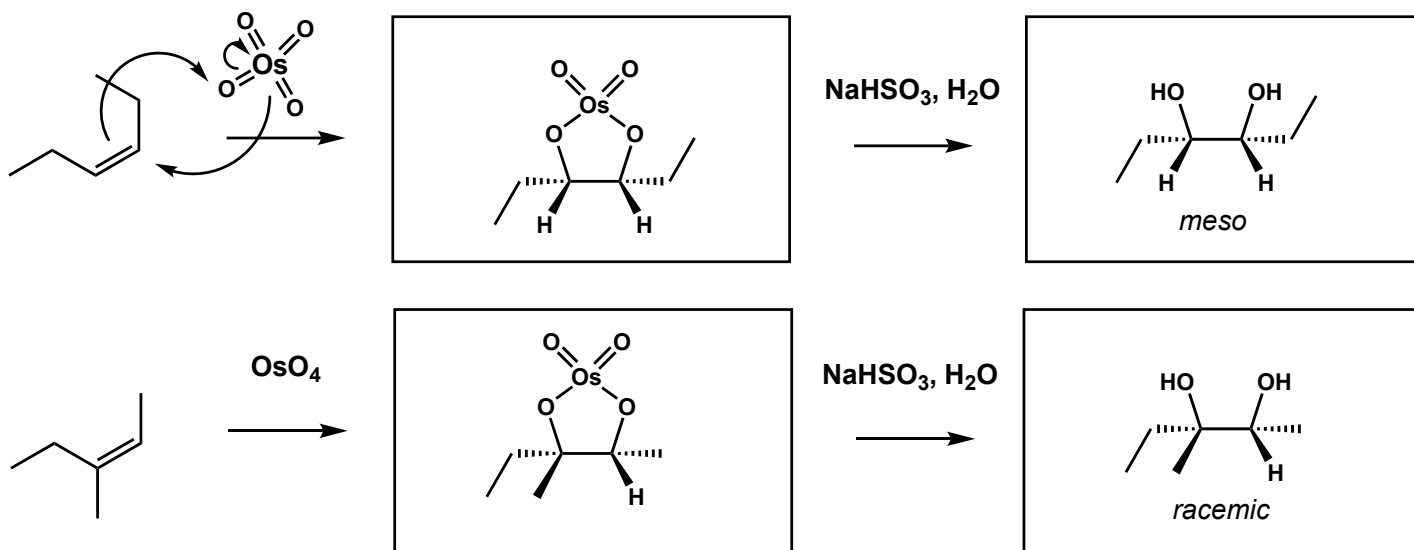
Practice drawing the arrow-pushing mechanism for the following reactions. *Hint: a halonium intermediate is involved.*

If the product contains stereocenters, specify its stereochemistry.



OsO₄ Oxidation

Show the intermediate and product for each reaction of an alkene with OsO₄. Remember to provide the product with the correct stereochemistry.

**Markovnikov versus *anti*-Markovnikov Hydrations of Alkenes**

Provide the product for each reaction. Remember to provide the product with the correct stereochemistry.

For each reaction, also provide the mechanism for the *stereodetermining step*.

